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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/697,571

10/31/2003

Takao Nakazaki

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22428

7590

02/15/2005

FOLEY AND LARDNER

SUITE 500

3000 K STREET NW

WASHINGTON, DC 20007

EXAMINER

HE, AMY

ART UNIT

PAPER NUMBER

2858

DATE MAILED: 02/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/697,571

Applicant(s)

NAKAZAKI ET AL.

Examiner

Amy He

Art Unit

2858

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on preliminary amendment dated 31 October 2.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Objections

2. Claim 3 is objected to because it is unclear what is the claimed "direction of an axis of the cylindrical surface accords with the direction of the axis of the case" (lines 6-7). Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Erdmann (U.S. Patent No. 3, 747, 036).

Referring to claim 1, Erdmann discloses a sensor device (in Figure 1) comprising:

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a coated electric wire (tin plated copper wire 15, column 4, lines 4-6) spirally wound around a detection circuit (10-14) in a planar manner for the purpose of electrostatic shield .

4. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by applicant admitted prior art (Japanese Patent Application No. 1, 436/1981).

Referring to claims 1-2, applicant admitted prior art discloses a sensor device comprising:

a coated electric wire (insulating flexible film having a conductor pattern is considered the coated electric wire, see page 1, description of the prior art section of the instant application) spirally wound around a detection circuit in a planar manner for the purpose of electrostatic shield.

Referring to claim 3, applicant admitted prior art discloses the sensor device of claim 1, further comprising:

a detection circuit board having the detection circuit (printed wiring board having the circuit, see page 1, description of the prior art section of the instant application); and

a cylindrical case (case of the proximity sensor);

wherein the coated electric wire is wound around the detection circuit board in a cylindrical manner, and the direction of an axis of the cylindrical surface accords with the direction of the axis of the case.

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5. Claims 1, 3 and 4 are rejected under 35 U.S.C. 102(b) as being anticipated by Crosby et al. (U. S. Patent No. 5, 801,530).

Referring to claims 1, Crosby discloses a sensor device (10 in Figure 4) comprising:

a coated electric wire (copper coated 78 in Figure 4; 300 in Figure 9, column 5, lines 18-20) wound around a detection circuit (76) in a planar manner for the purpose of electrostatic shield.

Referring to claim 3, Crosby discloses the sensor device of claim 1, further comprising:

a detection circuit board (60) having the detection circuit (76) ; and

a cylindrical case (housing 12);

wherein the coated electric wire(78; 300) is wound around the detection circuit board (60) in a cylindrical manner, and the direction of an axis of the cylindrical surface accords with the direction of the axis of the case.

Referring to claim 4, Crosby discloses the sensor of claim 1, wherein the sensor device is a proximity sensor device (10; abstract, line 1) comprise a detection coil (76) having a core (74); and the detection circuit includes an oscillation circuit (62 in Figures 6-7) having the detection coil serving as a resonance element.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crosby et al. (U. S. Patent No. 5, 801,530).

Referring to claim 2, Crosby discloses the sensor device of claim 1, wherein the coated electric wire (78; 300) is wound around the detection circuit (76) in a single manner. Crosby does not disclose that the coated electric wire is spirally wound around the detection circuit. A person of ordinary skill in the art would find it obvious at the time of the invention to modify Crosby to change the circular shape of the coated electric wire to a spiral shape, since changing the shape of the coated electric wire does not change the function of Crosby's proximity sensor device.

Referring to claims 7-8, Crosby discloses the sensor device of claim 4. Crosby does not disclose that the coating strength of the coated electric wire for use in shielding is greater than /same as the one used as a coil wire of the detection coil. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify Crosby to use different/same coating strength for the coated electric wire and the coil wire of the detection coil, since changing the coating strength of the coated electric wire does not change the function of the claimed sensor device.

7. Claims 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Crosby et al. (U. S. Patent No. 5, 801,530), in view of applicant's admitted prior art (Japanese Patent Application No. 1, 436/1981).

Referring to claims 5-6, Crosby discloses the sensor of claim 4, further comprising a detection circuit board (60) having the detection circuit (30). Crosby does not disclose a metallic film for electrostatically shielding the detection coil is formed at the outer surface of the core; and both ends of the coated electric wire is electrically connected to the metallic film of the core, and are electrically connected to a ground pattern of the detection circuit board at the intermediate portion of the coated electric wire.

Applicant's admitted prior art discloses a metallic film (metallic deposition portion of the core, see the description of the prior art section of page 1) formed at the outer surface of the core; and that the coated electric wire (copper foil portion of the film) is electrically connected to the metallic film of the core (through connection to the GND pattern of the circuit board), and are electrically connected to a ground pattern of the detection circuit board at the intermediate portion of the coated electric wire (see the instant application, page 2, lines 8-19).

A person of ordinary skill in the art would find it obvious at the time the invention was made to modify Crosby to disclose using a metallic film formed at the outer surface of the core, for electrostatically shielding the detection coil; and connecting both ends of the coated electric wire to the metallic film and also to a ground pattern of the detection circuit board at the intermediate portion of the coated electric wire, as taught in the admitted prior art, so as to provide a better shielding effect for the proximity sensor device.

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8. Claims 1 and 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamano (U. S. Patent No. 6, 522,254).

Referring to claims 1 and 9-11, Yamano discloses a photoelectric sensor device including a light receiving element (40) for converting light from a region to be detected into an electric signal, and a signal relating to the state of the region to be detected is output based on an output from the light receiving element (40), wherein the photoelectric sensor comprising:

- a detection circuit board (36) having the detection circuit (42 and 40);

- a cylindrical case (15); and

- a semi-split cylindrical board holder (30) which supports the detection circuit board and is contained inside of the case;

Still referring to claims 9-11, Yamano disclose a coated electric wire (screen 12 made of metallic fiber, column 8, lines 6-12), which cover portion of the light receiving element/the detection circuit board. Yamano does not specifically disclose that the coated electric wire is wound around the light receiving element/detection circuit board and the board holder in a planar manner. It would have been obvious to a person of ordinary skill in the art at the time of the invention to modify Yamano to wind the coated electric wire (12) around the entire light receiving element/detection circuit board, for the purpose of alleviating influence of noise, which would otherwise be imposed on the light receiving element/detection circuit board (column 8, lines 10-12).

Conclusion

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Amy He whose telephone number is (571) 272-2230.

The examiner can normally be reached on 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lefkowitz can be reached on 571-272-2180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AH
February 9, 2005.


ANJAN DEB
PRIMARY EXAMINER